

CLAIMS

What is claimed is:

- 1 1. A method of electrically connecting a semiconductor die to a package substrate,
2 comprising:
3 (a) applying an electrically non-conductive material covering at least a portion of said
4 die and extending onto said substrate to a plurality of contact pads formed on said
5 substrate; and
6 (b) applying an electrically conductive material over said non-conductive material and
7 extending from an electrical point of contact of said die to at least one contact pad on said
8 substrate.
- 1 2. A method as claimed in claim 1, wherein the conductive material is separated into a
2 plurality of conductive patches by laser trimming away portions of the conductive material.
- 1 3. A method as claimed in claim 1, wherein a hole is trimmed into the non-conductive
2 material over and down to the bond pads, exposing at least a portion of each bond pad to be
3 connected.
- 1 4. A method as claimed in claim 1, wherein an electrically conductive bump is formed on
2 each said die bond pad, said bump protruding through said non-conductive material and at least
3 partially through said conductive material.

1 5. A method as claimed in claim 1, wherein the insulating layer comprises a non-conductive
2 epoxy.

1 6. A method as claimed in claim 1, wherein the insulating layer comprises a non-conductive
2 polyimide.

1 7. A method as claimed in claim 1, wherein the conductive layer comprises conductive ink.

1 8. A method as claimed in claim 1, wherein the conductive layer comprises a metal ion
2 coating.

1 9. A method as claimed in claim 1, wherein (a) includes spinning the non-conductive material
2 onto the die and package substrate.

1 10. A method as claimed in claim 1, wherein (a) includes spraying the non-conductive material
2 onto the die and package substrate.

1 11. A method as claimed in claim 1, wherein (b) includes spinning the non-conductive material
2 onto the die and package substrate.

1 12. A method as claimed in claim 1, wherein (b) includes spraying the non-conductive material
2 onto the die and package substrate.

1 13. A semiconductor device formed by the process of:
2 (a) applying an electrically non-conductive material covering at least a portion of said
3 die and extending onto said substrate to a plurality of contact pads formed on said
4 substrate; and
5 (b) applying an electrically conductive material over said non-conductive material and
6 extending from an electrical point of contact of said die to at least one contact pad on said
7 substrate.

1 14. A device as claimed in claim 13, wherein the conductive material is separated into a
2 plurality of conductive patches by laser trimming away portions of the conductive material.

1 15. A device as claimed in claim 13, wherein a hole is trimmed into the non-conductive
2 material over and down to the bond pads, exposing at least a portion of each bond pad to be
3 connected.

1 16. A device as claimed in claim 13, wherein an electrically conductive bump is formed on
2 each said die bond pad, said bump protruding through said non-conductive material and at least
3 partially through said conductive material.

1 17. A device as claimed in claim 13, wherein the insulating layer comprises a non-conductive
2 epoxy.

1 18. A device as claimed in claim 13, wherein the insulating layer comprises a non-conductive
2 polyimide.

1 19. A device as claimed in claim 13, wherein the conductive layer comprises conductive ink.

1 20. A device as claimed in claim 13, wherein the conductive layer comprises a metal ion
2 coating.

1 21. A device as claimed in claim 13, wherein (a) includes spinning the non-conductive material
2 onto the die and package substrate.

1 22. A device as claimed in claim 13, wherein (a) includes spraying the non-conductive material
2 onto the die and package substrate.

1 23. A device as claimed in claim 13, wherein (b) includes spinning the non-conductive material
2 onto the die and package substrate.

1 24. A device as claimed in claim 13, wherein (b) includes spraying the non-conductive material
2 onto the die and package substrate.